

**FINAL REPORT FOR THE BERYLLIUM WIPE SAMPLE
FROM THE PLUTONIUM FINISHING PLANT,
BUILDING 234-5Z, ROOM 136 –
SAMPLE DELIVERY GROUP 222S20100331**

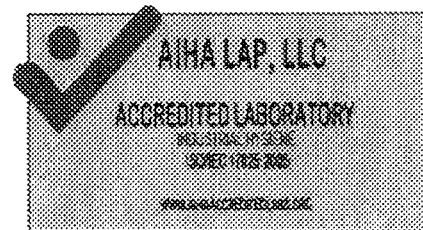
Document No.: 20100331

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Date Published

June 3, 2010



LAB # 164777

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NARRATIVE

FINAL REPORT FOR THE BERYLLIUM WIPE SAMPLE FROM THE PLUTONIUM FINISHING PLANT, BUILDING 234-5Z, ROOM 136 – SAMPLE DELIVERY GROUP 222S20100331

This is the final analytical report for the beryllium wipe sample received at the 222-S Laboratory on March 25, 2010 in good condition and with adequate paperwork and assigned to sample group 20100331. Following the issuance of the preliminary report, the sample was reanalyzed. Results are discussed in the Analytical Summary below.

DISCLAIMERS

- The information contained in this report is intended only for the use of the addressee and should be considered confidential.
- This report shall not be reproduced, except in full, without written approval of the laboratory.
- The results shown in this report pertain only to the actual samples tested.
- These results conform to the referenced requirements and specifications with any deviations or modifications discussed in the following narrative.

PROCEDURES

Method	Preparation Method	Analysis Procedure
SW-846 Method 6010C		LA-505-171, Rev. G-0
SRNL, WRCS-TR-2004-00395	LA-505-114, Rev. B-0	

METHOD MODIFICATION:

LA-505-114: This digestion procedure is a modification of the Westinghouse Savannah River Company (SRNL) Analytical Development Section Method (WRCS-TR-2004-00395, Revision 1, Method #1) Industrial Hygiene Procedure. The SRNL procedure utilizes a drying oven to heat and evaporate the sample and a hot plate for digestion. Laboratory procedure LA-505-114 uses a microwave for digestion. This method is applicable for acid digestion of air filter media, wipes, and bulk materials for Be analysis by inductively coupled plasma. Nitric acid, hydrochloric acid, hydrofluoric acid, and hydrogen peroxide are added to the sample and allowed to stand for one hour prior to microwave digestion.

ANALYTICAL SUMMARY

The sample was analyzed in accordance with ATL-MP-1029, *ATL Industrial Hygiene Quality Assurance Project Plan for 222-S Laboratory* and Memorandum PFP-LOI-10-0001, *Letter of instruction for Analysis of Beryllium Swipe Samples from Glove boxes in the PFP Complex* (LOI). The analyses presented in this report meet all requirements of the LOI and ATL-MP-1029. Based on possible matrix interference, the sample was originally diluted by a factor of ten and the IH required detection limit of 0.05 µg/sample was not achieved. Following issuance of the preliminary report, the sample was reanalyzed with no dilution. On the reanalysis, a profile scan was run and a beryllium peak was observed. However, three analytes (aluminum, iron, and copper) saturated the detector and the profile shows interference on the beryllium peak. It is the laboratory's opinion that copper is the interfering element. A post-

digestion spike gave a low recovery (~ 70%) that fails to meet the typical control limits of 75% - 125% recovery. This failure is an additional indication of matrix interference. An "N" flag was applied to the sample result to indicate the spike failure. A "J" flag was applied to indicate that the result is an estimate due to the matrix interference.

Attachment 1

DATA SUMMARY REPORT

DATA SUMMARY FOR SAMPLE DELIVERY GROUP 222S20100331

Customer Sample ID	Sample Portion	Lab Sample ID	Analyte	Standard (% Recovery)	Blank (ug/sample)	Result (ug/sample)	Spike (% Recovery)	Reporting Limit (ug/sample)	Qualifier
B24W12	Ghost wipe	S10M000265	Beryllium	96.5	<0.0500	0.153	69.8	0.0500	JN

NA = Not Analyzed, ND = Not Detected

J - Estimated

N - Spike Outside Range

Attachment 2

ANALYSIS DATE REPORT

ANALYSIS DATE REPORT

Sample	Customer Sample Id	Method	Prep Method	Preparation Date	Analysis Date
S10M000265	B24W12	ICP-BE	MICROWAVE	04/26/2010 18:30	05/26/2010 10:00

Attachment 3

RECEIPT PAPERWORK

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST		LO-090-101 Rev <u>EE-0</u>
Date Samples Received: <u>3/25/10</u>		Group #: <u>20100331</u>	
Number of Samples: <u>1</u>			
Sample Custodian: <u>[Signature]</u>			
Sample Custodian to Complete:			
Action	OK? (Y/N)	N/A	Comments
RSA COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete			
Check that outer custody seal is intact, if present	✓		
Record cooler temperature in centigrade, as appropriate		✓	<input type="checkbox"/> Check if no cooler and/or no ice
Samples are intact and in good condition	✓		If No, provide comments on back <u>Pallet Can</u>
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		
Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)			
PM to Complete:			
Samples acceptable for release? <u>yes</u>		PM Initials <u>ROS</u>	Date <u>4/1/2010</u>
If No, comment on communication and resolution:			
Other Comments: <u>Unable to verify numbers on the container.</u>			

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.
DISTRIBUTION: White - Remain with Samples Color - Customer BC-6000-828 (09/95)

GENERATOR KNOWLEDGE INFORMATION

1. Chain of Custody Number _____ CACN/COA SLA _____ Customer Identification Number JHSF-05779-001

2. List generator knowledge or description of process that produced sample. Or list description of sample source:

Swipe sample from glovebox in building 234-5Z, room 136.

MSDS Available? ☒ No ☐ Yes Hanford MSDS No. _____

3. List all waste codes and constituents associated with the waste or media that was sampled, regardless of CERCLA status.

a) Does the sample contain any of the following listed waste codes?

By checking "unknown" the customer understands that no knowledge is available following a careful search.

List Federal Waste Code(s): _____

List Constituent(s): _____

P Codes: _____ ☐ Yes ☒ No ☐ UnknownU Codes: _____ ☐ Yes ☒ No ☐ UnknownK Codes: _____ ☐ Yes ☒ No ☐ UnknownF Codes: _____ ☐ Yes ☒ No ☐ Unknown

b) List applicable characteristic waste codes, flash point, pH, constituents, and concentrations as appropriate.

D001: ☐ FP <100°F ☐ FP ≥100 <140°F ☐ DOT Oxidizer ☐ Yes ☒ No ☐ UnknownD002: ☐ pH ≤2 ☐ pH >12.5 ☐ Solid Corrosive (WSC2) ☐ Yes ☒ No ☐ UnknownD003: ☐ Cyanide ☐ Sulfide ☐ Water Reactive ☐ Other _____ ☐ Yes ☒ No ☐ UnknownD004-D043 (Identify applicable waste codes and concentrations): _____ (i.e., peroxide former, explosive, air reactive) ☐ Yes ☒ No ☐ Unknown

characteristic, list any known underlying hazardous constituents (UHCs) reasonably expected to be present, and their concentrations that may be present above the LDR treatment standard (40 CFR 268.48):

d) List any known Land Disposal Restrictions (LDR) subcategories, if applicable (40 CFR 268.40):

Not applicable.

e) List any applicable Washington State dangerous waste codes: (not required if federally regulated)

WT01: ☐ Yes ☒ No ☐ UnknownWT02: ☐ Yes ☒ No ☐ UnknownW001: ☐ Yes ☒ No ☐ Unknown

List constituents and concentrations: _____

(*State mixture rule for ignitability)

WP01: ☐ Yes ☒ No ☐ UnknownWP02: ☐ Yes ☒ No ☐ UnknownWP03: ☐ Yes ☒ No ☐ UnknownF003*: ☐ Yes ☒ No ☐ Unknown4. Is this material TSCA regulated for PCBs? ☐ Yes ☒ No ☐ Unknown ☐ Analysis Requested

List concentration if applicable: _____

If yes, what is the source of the PCBs? (see TSCA PCB Hanford Site User Guide, DOE/RL-2001-50)

☐ PCB Liquid Waste ☐ PCB Bulk Product Waste ☐ PCB Transformer ≥500 ppm ☐ Unknown
☐ PCB Remediation Waste ☐ PCB R&D Waste ☐ PCB contaminated electrical equipment (capacitor/ballast) <500 ppm
☐ PCB Spill Material ☐ PCB Item ☐ Other PCB Waste (list) _____
5. Is this material TRU? ☒ Yes ☐ No ☐ Unknown

6. ACCURACY OF INFORMATION

Based on my inquiry of those individuals immediately responsible for obtaining this information, that to the best of my knowledge, the information entered in this document is true, accurate, and complete.

Print & sign

Bob Cathel

Bob Cathel

Date

3/9/10

RADIOACTIVE SHIPMENT RECORD				20100331 3. Page 1 of 1		4. Ship Prepaid		5. Via Site Carrier	
1. SHIP FROM U.S. DEPT. OF ENERGY C/O Company <u>CH2MHILL PRC</u> Address <u>PPF</u> City, State, Zip <u>200 West Area</u> Contact <u>Jeff Widney</u> Phone <u>372-3090</u>				2. SHIP TO <input checked="" type="checkbox"/> U.S. DEPT. OF ENERGY C/O Company <u>ATLII</u> Address <u>222-S</u> City, State, Zip <u>200 West Area</u> Attention <u>Gerald Ritenour</u> Phone <u>372-2742</u>				6. SHIPMENT AUTHORIZATION <u>KJ001</u> NUMBER	
						7. EMERGENCY RESPONSE Telephone <u>1-509-373-3800</u> Emergency Response Guide(s) <u>163</u>			
HM 8. Proper Shipping Name: <input checked="" type="checkbox"/> Radioactive Material, Type A package						PRI HAZ SUB HAZ UN ID 7 UN2915			
9. No. Pkg.	Model Package	COC/Spec	Serial No.	Seal No.	Isotopes	C.S.I.	T.I.	Bq/Package	Gr. Wt. Kg.
1	Viking	DOT 7A TYPE A	S/H 12	05290	Pu239Pu240Am241	N/A	N/A	1.56E-5 TBq	9 Kg
10. Identify for Normal Form Only			11. <input type="checkbox"/> Highway Route Controlled Quantity <input checked="" type="checkbox"/> Exclusive Use Shipment with instructions <input type="checkbox"/> Placards Applied <input checked="" type="checkbox"/> Fissile Excepted, Grams <u>1.397E-03</u> <input type="checkbox"/> UN ID Marking			12. LABELS APPLIED <u>Radioactive Yellow - II</u>			13. ADDITIONAL LABELS / MARKINGS
Physical Form <u>Solid</u> Chemical Form <u>Oxide</u>									
HM 8. Proper Shipping Name:						PRI HAZ SUB HAZ UN ID			
9. No. Pkg.	Model Package	COC/Spec	Serial No.	Seal No.	Isotopes	C.S.I.	T.I.	Bq/Package	Gr. Wt. Kg.
10. Identify for Normal Form Only			11. <input type="checkbox"/> Highway Route Controlled Quantity <input type="checkbox"/> Exclusive Use Shipment with instructions <input type="checkbox"/> Placards Applied <input type="checkbox"/> Fissile Excepted, Grams <input type="checkbox"/> UN ID Marking			12. LABELS APPLIED			13. ADDITIONAL LABELS / MARKINGS
Physical Form Chemical Form									
HM 8. Proper Shipping Name:						PRI HAZ SUB HAZ UN ID			
9. No. Pkg.	Model Package	COC/Spec	Serial No.	Seal No.	Isotopes	C.S.I.	T.I.	Bq/Package	Gr. Wt. Kg.
10. Identify for Normal Form Only			11. <input type="checkbox"/> Highway Route Controlled Quantity <input type="checkbox"/> Exclusive Use Shipment with instructions <input type="checkbox"/> Placards Applied <input type="checkbox"/> Fissile Excepted, Grams <input type="checkbox"/> UN ID Marking			12. LABELS APPLIED			13. ADDITIONAL LABELS / MARKINGS
Physical Form Chemical Form									
HM 8. Proper Shipping Name:						PRI HAZ SUB HAZ UN ID			
9. No. Pkg.	Model Package	COC/Spec	Serial No.	Seal No.	Isotopes	C.S.I.	T.I.	Bq/Package	Gr. Wt. Kg.
10. Identify for Normal Form Only			11. <input type="checkbox"/> Highway Route Controlled Quantity <input type="checkbox"/> Exclusive Use Shipment with instructions <input type="checkbox"/> Placards Applied <input type="checkbox"/> Fissile Excepted, Grams <input type="checkbox"/> UN ID Marking			12. LABELS APPLIED			13. ADDITIONAL LABELS / MARKINGS
Physical Form Chemical Form									
14. Shipment DE-Ci: <u>1.525E-04</u>				Shipment Totals		C.S.I.	T.I.	Bq/Package	Gr. Wt. Kg.
						N/A	N/A	1.56E-5 TBq	9
15. Surface Dose Rate of Package <input type="checkbox"/> <0.005 or _____ mSv/hr <0.5 or <u>40.2</u> mrem/hr (N+B γ)		Dose Rate @ 1 Meter from Surface of Package <input type="checkbox"/> <0.005 or _____ mSv/hr <0.5 or <u>40.2</u> mrem/hr (N+B γ)		Smears of Outer Container <input type="checkbox"/> <4.0 Bq (220 dpm) β γ/cm ² <input type="checkbox"/> <0.4 Bq (22 dpm) α/cm ² <input type="checkbox"/> <Tbl. 2-2 HNF-5173 Limits		TRUCK LOAD OR EXCLUSIVE USE Surface <input checked="" type="checkbox"/> <2 mSv/hr (200 mrem/hr) @ 2 meters <input checked="" type="checkbox"/> <0.1 mSv/hr (10 mrem/hr) @ Cab or sleeper <input checked="" type="checkbox"/> <0.02 mSv/hr (2 mrem/hr) (Using N+B γ)			
Additional Data and Instructions (inc. Readings on Internal Packaging)				Bldg. <u>23458</u> Survey No. <u>2-100325005</u> Date <u>03-25-10</u>					
16. TRANSPORTER Vehicle Number <u>682 02762</u>		DRIVER SIGNATURE <u>[Signature]</u> PRINT NAME <u>MARVIN HUCK</u>		17. RECEIVER RECEIVER SIGNATURE <u>[Signature]</u> PRINT NAME <u>C Edwards</u> Date <u>3/25/10</u>					
18. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Certifier's Signature <u>[Signature]</u> Print Name <u>Scott Weiss</u> On behalf of DOE-RL Date <u>3/25/10</u> Organization <u>CSG</u>									
19. AUTHORIZATION FOR SHIPMENT									
AIR TRANSPORT CERTIFICATION <input type="checkbox"/> N/A		CARGO AIRCRAFT <input type="checkbox"/> Cargo Aircraft Only Labels Applied		PASSENGER AIRCRAFT <input type="checkbox"/> Ltd Qty <input type="checkbox"/> Research/Medical Diagnosis <input type="checkbox"/> <3 T.I. <input type="checkbox"/> Human Medical Research		Pkg. Dimensions (cm)			
20. OFFSITE AUTHORIZATION									
Survey No.		Date Shipped		Routing		ETA			
Approved for Shipment Offsite						Date			